Notebook, N-06-09-01.2

This notebook covers the period September-October 1906. Most entries are by Edison, although there are a few scattered notations by an unidentified experimenter. The book contains notes by Edison regarding the preparation of iron compounds for storage battery experiments. Some of the entries also indicate preliminary test results from cells using the iron compounds. In several entries, Edison notes the involvement of Otto Groethe. The front cover is labeled "Got all Runs Iron 2500 to 2850." The pages are unnumbered. Approximately 260 pages have been used.

IRON
William H. Hasey
STATIONER
Good Work Promptly
88 William Street,
New York.

Sept 1906

2500 — 3 Iron flat pockets
1.825 grams Turnbulls Blue
run with 4 Nickels.

2501 1.791 grms

2502 1.805 grms

Soak in KOH 3 days changing
KOH. 3 times, then send up stairs.

After 1st change up stairs change
the KOH after dissolving change KOH.
Thereafter you need not change
KOH.

2503 Iron pockets

Turnbulls blue roasted -
20 mesh after roasting
Wt 5.7751 -
This is like metal Can't Gz
powdered.

2504 Same as 2503 but can
Gz powdered - not much metallic
Weight 5.251

To Gz put with 4 Nickels 4 Iron Reg

2505 3 Reg 4.5 Irons

Charge 15 hours regular
Then discharge - put in Water
equiv to Edison

Edison to soak in large
quantity water - then Ethyl,
then dry & recorrugate
250 at 1100.

Run Reg after receiving
irons from Edison

2506

2507

Mode

2508 Iron pocket filled with
Iron oxide made electrolytically
from Sulfate by Edison
250 almas Corning 100 smooth
No Hg — 4 nickels —

Run regular + then test
for economy

Mode

2509 – Two Iron pockets
Pocket 1/3rd filled with Req
Iron Mix – Then 50 mesh Iron
screen nickel plated laid in –
then 1/3rd more Iron Mix –
another piece screen then
the other 1/3rd put in —
altogether 4.5 grms —

The screen should be cut
so Ends+sides will touch
the pockets — Irons regular
+ Rem Regular —

2510 ——

2511 = Dup of Ralph Abrogasti
No 6699 - 6706 - Charged
Then discharged & put in
Water & grown Edison to
Soak out KOH & treat
with Ethyl & recorrugate
to 250 atmos -

Then run regular

2512

2513 - 14	
1335	1252
1375	1335
1392	1370
1217	1200
1205	1192
1205	1142
1435	1400

Dark Room (Rock Roasted Electrical Shop)

2513 Remove from old iron plates Enough mix to make 2 pockets — Use plates from E 18 that have run long time + are dry — Repress + = Corrugate 250 alums 415 Cakes —

Run Reg

2514

Made

2515 — 2 pockets

Containing Vanadium free iron — Hg but reduced by Hydrogen with a thick buffer of iron between Hydrogen & final iron oxide so the metal in buffer could Combine with anything Contained in the Hydrogen

Runs Reg —

2516 —

2517 3 pockets 5 grms each
Vanadium free iron
Charge then discharge
put in water + give to
Edison to take mix out
and dry -

2518 See next page

2519 -

2520 — 2 pockets.

Vanadium free nail taken out of 2517 group — dried & pulverized fine & put in two pockets & separated 100 strength 250 atmos Cornstarch

Russ Reg

2521

2522 = Pack one tube
with 200 mesh powdered
Sulphide of Iron – 150 Tamps
Alternately Charge &
discharge 5 times Each
in KOH Changing KOH
Each time until its
Colorless on discharge
Use Nickel Strip –
Then assemble with
4 nickels True Rad

2523 = 2 pockets of Fe

Non pyrophoric Vanadium free
Iron - 4.5 gram Cake
Run req 4 nickels -

2524

2525 Dup of 2523
Except the iron has Mercury
in.

2526 —

2527 2 pockets

Fe oxide plates made from Ferric Oxide from Oxalate, moistened with minimum 21% KOH, moulded into Cake with 300 atmospheres & then baked at white heat, put in pockets to make Contact, but not pressed in press

Run Reg 4.8 Cells after heating ?

2528

2529 - Duplicate of 2527

but soaked in Nitrate of Mercury by Edison after baking then put in KOH soaked few minutes then put in water for 2 hours then squeezed in pocket so it makes Contact + without pressing in press —

2580

2581 Dup of 2527

but dozen of the plates reduced to show water run in—
Then removed - allowed self heat + dried—

Assembled in pockets to make contact, but not pressed—
2 plates used
pressure balance in clamp bottle

2532

2533 - Dup of 2531

Except reduced as they are not pyrophoric - Rust degen plates —

Take 2 + assemble in jacket to make caliper Cut not pressed in press

2536

2537 Two plates from 2533 – given to Edison to Sodium Amalgmate, wash & dry – assembled in pocket to make Contact Cont not pressed in press – preserve balance of Cond bath

2538 –

2539

Two plates made by melting 75 parts scale oxide of Fe with 25 parts Black Oxide Copper — make contact good

2540

2541

Make 1/2 doz plates
from Melted oxide —
Cut to size & reduce in
Hydrogen. run in water
Make use of to cut & dry

2542

2543

3 or 4 plates made from Melted Scale oxide of Iron — Reduced in Hydrogen to Non pyrophoric

2544

2545 2 Reg 2mm mix in iron pockets which have not been nickel plated

2546

2547 =

Ferric oxide from precipitating Fe_2SO_4 solution by ammonia. Wash dried + heat moisten slightly. Then press into plate at 300 atmospheres, + ~~heat~~ ~~Anticip~~ Then bake to yellow heat, put cakes in pochetti to make good contact but don't press in press

2548

2549 =

Same as 2547 —
but reduced in hydrogen
to Nonpyrophoric plate.

2550

2551 -

Same as 2549 —
Except amalgamated Cu
Sodium amalgam —

2552

2553

[illegible] ferric hydroxide
~~ferric oxalate~~ prevents
a Cake using blanks of
moist ferric hydroxide
Press 300 almost a Cake
to white,

2554

2555 - Dup of 2553
Except reduced with
to non pyraphoric

2556

2557 Regmix with Regular pocket block not Rogers filed burrs off —

Rem Reg 4 Nickels

2558

2559=

Central core a perforated tube. 40/1000 dia - put in mould in which we make 4 tubes - use hollow plunger make Central tube long so helps in plunger act as guide - Then pack with regular Brown mix - Take out of mould & use Central tube as Electrode. Weigh the Whole tube & then weigh the piece Cut off this will give weight of mix — assemble as usual Nickels - Run Reg Heat Ceramony

ordered

2560 - 2 Iron Packets
1 gram of Reg mix - filled up
space with grass of packet
Laid in —
Run Reg test Economy

2561

Ordered

2562. Dup of 2560
Sect 2 grasmere

2563

ordered

2564 Dup of 2560
But 2½ grammes

2565

ordered

2566

Dup of 2560

But 3 grammes

2567

ordered

2568
Dup of 2560
But 3 1/2 grams

2569

Ordered

2570 Dup of 2560
But 4 grammes

2571

ordered

25/2 Dup 2560
but 4½ grammes

25/3

ordered

2574 Dup 2560

But 5 gms

2575

ordered

2576 Dup 2560
But 6 grams
Use deep pocket

2577

ordered
2548 Dup 2560

But 7 grommets
use deep pockets

2549

ordered

2580 Dup 2560

But 10 grammes
make Cake 4 inch deep
packet.

2581

2582

Mould around a perforated tube 40/1000 dia Non pyrophoric iron —/

2583

Take CP Ferric & wet with Ni Sulfate & ignite - the Ni so prep'd portioned as to give 30% of Nickel to 70% metal Reduce Dry gul as way + half heat / dont use H2

2584

2585

Reduce Cl Oxalate by Hydrogen let in Water. Then add Hg

2586

2587

Ferric moulded with perforated sheet in Centre —
Reduced by Hydrogen to Monoxyphoric
Charged hot 30 hours

2588

2589=

Ferric Ox Waxed with
Ferric hydroxide and binder
Pressed with Conical
Surface & Flat Base Baked
212 or thereabouts —
Reduced to Non pyrophoric
state in Hydrogen
Charge half an hour —

2590

2591 Dup of 2589

Except reduced w Hydrogen
Regular + water bath w
Self heated —

2592

2593 2 Reg pockets Fe

Charge 40 hours Take out
Put in Large bucket water
~~Charge~~ 6 or 8 hours
Then take out + expose to
air to get heat dry furnace
at 212 or thereabouts not less
~~over~~ higher any 220 or 230
Then Recharge treat regular

2594

2595

~~I~~ one charged iron

Put one in porous cell with 33% the cattle in outside 21% — note difference of 6 Village —

~~25~~

2596

Ditto ~~Ditto~~ Nickel plate with same condition

2597 Rum ore changed now
+ Nickel. So Fe is up 33%
+ Ni is 21% — use 1/3rd rule
discharge rate.

2598 Reserve to Boost
Rum Che Ni = 33.% Fe = 21%

2599

Ferric oxide worked with
Tungsten sulfate to give
10 or 15% Tungsten dioxide
dried and hydrogenated
at 400° product 4.5

Running —

2600 2 Fr. s –

Take old packets, dip in Conc soln of Chloride from drug grocer 2 or 3 times Then dip in 2½% nitric drying — Wash out KSCN in H₂O — Ethyl Alc est 250 Fahr a test.

2601

2602 –

New pockets [illegible] required
dep in Comc Chlorides / Hard – dep in
21½ – 1½ Chlorides – dep in [illegible] pts 258
½ Sulphates Rem Reg

2603

2604 =

Reg was not run -

Dup in Core Chl Fz clay-dep 21%
Leach clay - dark gray to dk 250 -
Redep in Core feld$_2$ - clay-dep
21%- Leach brn gray to 250
1/2 hour

2605

No good Nothing

2606 — 2 grams

Ferric from Oxalate, burned. mixed with little KOH 21.0/0 pressed 300 atmos with 1/32 hole rim screen cloth, Reduced to non pyrophoric in Hydrogen —

Run Req —

2607

2608–9

357	442
458	540
435	515

2608 . 5 grms zinc ferrie from Vajree Oxalate wet with 21% KOH, & pressed 300 atmos into Cake with 1/32 hole. view screw — Not Great up high with put right in water-think too high spot — Run req 4 weeks.

2609

2610. Try economy of Fe without increasing in mix

2611 — 2 Grms

Containing 415 grms mix, having
20% of Copper in mix —
4% of Mercury

Test for Capacity & Economy Amalgam

2612

2613 Dup of 2611 2 pkt.

But iron mix containing 30% of Copper - 4% Mercury

2614

2615 Dup. of 2611

Bud containing 20% Copper
+ 5½% of Melaun

2616

2617 - Dup of 2611
But 30% Copper +
8% of Mercury

2618

Economy Lavels.

2619. 6 packets Reg mix 415

Put in this cell 250 Milligramm of Bromide of Palaverum with the KOH 21% 4 nickels

2620 Put in this cell 500 Milgrms Bromide of Palaverum in the 21% KOH — 4 nickels

2621 Put in this cell 1 gram Bromide of Palaverum in 21% KOH, 4 Nickels

2622 ditto 2 grams Pat Brown

2623 ditto 3 grams "

2624 ditto 5 " "

2625 — 2 packets —

45 grammes Non pyrophoric iron — charged 50 hours in 21% Hot 175 deg fahr — Then run regular Cold.

2626

2627 Size of Ralph used distilled
cooler to cool of the at his work

2628 = Cakes made from ignited Oxalate. pressed 300 atmos with minimum KOH 21% — Brot to a white heat Soaked Conc Cu Sulfate & Brot up to cohitish yellow - clamped to make Contact Charged 24 hours —

2629 Tungstic acid mixed with Sulphate Co so 6= 50%
Tungsten metal 50% Copper
Ignited & Reduced in Hydrogen
To Mon pyrophoric —
Fill Cup full by making Cake
Wt

2630 — Wt

2631 Cadmium. Oxide of
Sulphate Copper - ignited
as 62 50 parts Cadmium Metal
50 pts Copper metal
Reduce by Hydrogen
Cake + put in Cups
Lot

2632 Lot

2633 Of 40 parts metal
60 " Copper
Reduced in regular way in
Hydrogen —
6.5. Cake

2634 —

2635 Drop of 2633
but · 60 Iron
40 Copper -

6.5 Cake

2636

Dup 2637

2637

60 Copper
40 Iron 5% Mercury

6.5 Coke

2638

2639 - Deep 2633

60 gram
40 Copper - 5% Hg
6.5 Cake

2640 -

2641 – 2

1085	1090
1100	1060
1030	977
967	917
1112	1083
1143	1121
1492	1490
1380	1367

CO

2641 2 grids

Rabinowitz No 704 –

75% Fe

25% Copper – Reduced & Self bonded

Motley – 6 gram Cake –

Reg pressure – Run Reg

2642

2643 – cf 4

1100	1100	1095
845	825	800
665	665	645
117	108	109
92	96	84
84	84	92
735	732	740

Co

2643 – 3 Irons

Rabraquat NO 706 6.5 Cake

50% Tz

50% Co Reduced viscosity water

No Hbq Run Req

2644

2645

2646 = 2 qr-ds - 4.5 gms
Ordinary Req Ferric from
Oxalate from Silver Lake
Req pressed Return Req

2647

No Current,

2648 2 grids 4.5 grams
Iron Oxide free from Va Wo Cr Mo
from Oxalate. 1st precipitation —
Press Req r — Req

2649 -

No Comment

4.5 grms
2650 - ~~Dup~~ 2 grids Dup of 2648 but 2nd precipitate from Oxalate, press Reg Rem Reg

2651 —

1	1155	1100	
2	990	935	
5	1083	1017	

Dallas

2652 - 2 Reg Rockets 4x5 dry mat plates dipped ~~Sat~~ Ferric Chloride with 20 ~~Sat~~ 10 mins - then dried - then boiled 10 mins 5% KOH, then dried - peroac-Cl2 out on coater at Rem Sreg

2653

1	—	50
2	120	285
3	265	460
4	167	396
5	500	817

Co

2654= 2 pkts same as
2652- but pkt mix dehydrated
Eng beans Kept 1 hour at 350 Fahr.

2655

1	1075	1100	
2	700	700	
3	635	670	
4	92	129	
5	121	975	
6	167	121	CO

2 pockets

2656 — RA, 150 706 - Iron
50% Cu 50% Fe No Hg rubbing H, sufficient

65 gram Cake — regular press —
Corrugated 250 atmospheres

Run Rey — 4 Nickels —

2657

Curious blue deposit work

No. Current

2658 = 2 packets -

45 grms -

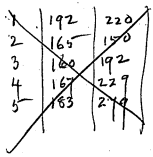
Prawn St Giles Oxide - gives some ferrocy reaction with acetic & Ferro -
Made from oxide precipted from pure Nitrate by NaOH & boiled long time - gently dried - got by DrQ by accident, not by -

2659 =

2660 Dupof 2658

Except after making up in pocket dip for 5 minutes in Concentrated Sat Bichloride of Mercury – dry + then soak in hot 21% KOH. qhours – then put ~~2661~~ in water 5 hours change Water twice – dry + Run Req –

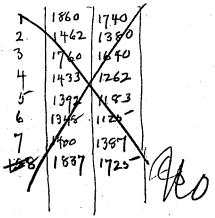
2661



2662 50% Fe 50% Cobalt

Made by RA from moistening Ferric with pure Co Sulphate & igniting — Reduced by Hydrogen at 600° C heated — Run Rad

2663



2664- ~~[illegible]~~ Dup of 2662 Except 5% of Mercury added

2665

1	1860	1740
2	1462	1380
3	1760	1640
4	1433	1262
5	1392	1183
6	1348	1125
7	1400	1387
8	1837	1725

490 to grams of Fe

Co

75 / 1837 (490
1500 / 337

2666 — 2 cups 5 grams —
75% Fe 25% Bismuth, No 707 RA-
Reduced H + Self heated —
Press + run Reg

2667 490 + 5 made

good Esow —

Note

750

1380

19°

1	1100	1080
2	1200	1200
3	1260	1260
4	1067	1071
5	1000	1050
6	992	993
7	1292	1255
8	1300	1300

Co

25 | 1300 (52 0
125
50

520 MAH to gram fe

2668 2 pkts - 5 gram
50% Fe 50% Bismuth
Self heated Reduced By H.
No 709 RA -
made

2669

870	860
1290	1400
1290	1400
943	1000
842	833
821	833
1270	1377
1300	1040

. Co

3)1377
459

4.59 Mgff per gram Fe

2670 = 2 pockets . 5 grams
60% Fe 40% Copper
Reduced by Hydrogen 4 hrs. at 600°C
Mixed 5% Mercury Oxide —
Grew trees 3 days
made

2671

1	1170	1140	
2	1055	1050	
3	1080	1070	
4	1000	958	
5	1210	1183	
6	1117	1100	
7	1375	1295	Co
8	1242	1250	

Note going up when cut out

2672 = 2 pockets. 5 grms =
30 Cu 70 ft2 Red by H self
heated - 5% Hg mixed
Reg press Rubr Reg

2673 made

2674 2 packets Fz Mix
Req mix (Fz) 5 grams
Same Req quota Edison to Gs
Use C for economy of Prod
4 Mi

2675 = Each cell 21% with
5 grams Chloride of Potassium

2676 Dup of 2674

Except 5 grms Bromide Potassium
Ed. 4 decl

2677

2678 - Dup 2674
Except. 5 grms Podocarpic Acid

2679

2680 Dcap of 2674

Except 4 grms Chloride of Palaeum 2 grms Bromide of Sodium -

2681

2682 - Dup of 2674

Except 4 grms Chloride Potassium
2 grms Bromide Soda
2 grms Iodide of Lithia
in Each Cell ——

2683

2684 Dup of 2674

Except 5 grms Arsenite Potash
Each Cell —

2685 —

2686 Dup of 2674

Except 5 grms Arsenate Potash

2687

2688 Dup 2674
Except. 5 grms Oxalate Palonth

2689

2690 Dup 2674

Except 5 grms Bisulphite of Potash Each Cell

2691

2692 Dup of 2674

Except 5 grms Borax

2693~

2694 Dup 2674

Except 5 grms Formate Padcouth

2695

2696 Dup of 2674

Except 5 grms Hypophosphite Potash -
Each cell

2697

2698 Dup of 2674
Except 5 grm. Orthophosphate PO_4
Each cell —

2699

2700 Dup of 2674

Except 5 gms Ethylsulphite Potash
Each cell

2701

2702 Dup of 2674
Except 5 gms Acetone
Each add

2703

2704 – Dup of 2674

Except 5 gms formaldehyde
Each cell,

2705

2706 Dup 2674

Except 5 grms Silicofluoride Potash.
Each Cell.

2707

2708 Dup 2674

Except 5 grms

Sulphoarsenate P.C. each

Each cell,

2709

2710 Dump 2674

Except 5 grms Sulphide
Mercury Each cell

2711

2712 Dup 2674
Except 5 grms Hyposulphite Potash
Each Cell

2713

2714 - Dup 2674

Except 5 grams Sulphide Patrol
collect - CP —
Each cell.

2715

2716 Dup 2674

Except 4 grms Chloride Potash
& 3 grms Sulphide Potash
in Each code —

2717

2718 Dup 2674
Except 5 grms
Monochloroacetic Polarb

2719

1	1165	1140
2	1170	1170
3	1060	1100
	1127	1083
	1050	1053
	1167	1167
x	1392	1372
8	1375	1317

Co

4 | x 1392
348 Mall per gram fe

Note going up when cut out

2720 — 2 pkts
5 grams
Req press Rum Retg
80 % Zn 20 Cu
5% Hg added —

2721 made

1	995	837
	1145	1023
	1200	1100
	814	800
	937	704
	833	983
	1072	1002
8	1250	1100

625 Watt per gram Sf

2722 2 pkts –
5 grms 60 Copper
40 1/2 Fe
5 % Hg Reg grams Reg grams
Ra 724
2723 made

Note - 625 Watt per gram Sf

1	900	1070	
1	1000	1070	
1	1000	1100	
1	721	775	
1	654	733	
1	667	833	
1	1000	1150	
4	1000	1200	Co

2724 2 pkts
5 grms -
60 Copper
40 Fe no Hg
Ra 720 -
made

2725

1337	1300
1200	1165
1425	1370
1167	1167
1600	992

2726 2 plts

5 grams Reg non 15% HgO

prem Reg Rum Reg

2727 RA

Note bad effect

Excessive Hg

1	1310	1332	
	1145	1050	
	1355	1322	
	1150	1062	
	984	987	C6

2728 2 pkts - 5 grams
Reg now 20% HNGO
Rheo reg run Reg

2729

Note bad offset
Specs of Hg

1	1225	1242
	1085	1140
	1300.	1350
	1075	1117
	983	983

2730 · 2 pkts —

5 grms Req 2 rnd 25% HgO

press Req run req

2731

720	792
875	980
1120	1100
917	917
838	871

2732 2 pkts
5 grms Req new 40% Hgo.
press Req Rim req

2733

1	967	1075
	958	1050
	1130	1192
	917	967
	833	833

C

2734 2 pkts
5 grms Req now 30% HgO
2735 — Req press num req

1	470	490	
	795	795	
	925	957	
	767	754	C
	667	771	

As Bismuth is not so likely as HgO to come out per Bismuth would be better than HgO

Tin probably better still if it will stand recovering

2736 2 pkts

5 grms Reg now 50% HgO,

2737 Press reg runs reg

Test

per gram	7½ 15% Hg	335
	20	333
	25	354
	40	367
	50	383

Apparently this shows Mercuphen has a limit

This is not true with Bismuth

Bi	50 7½ 50	no Hg.	520
	25 75		475

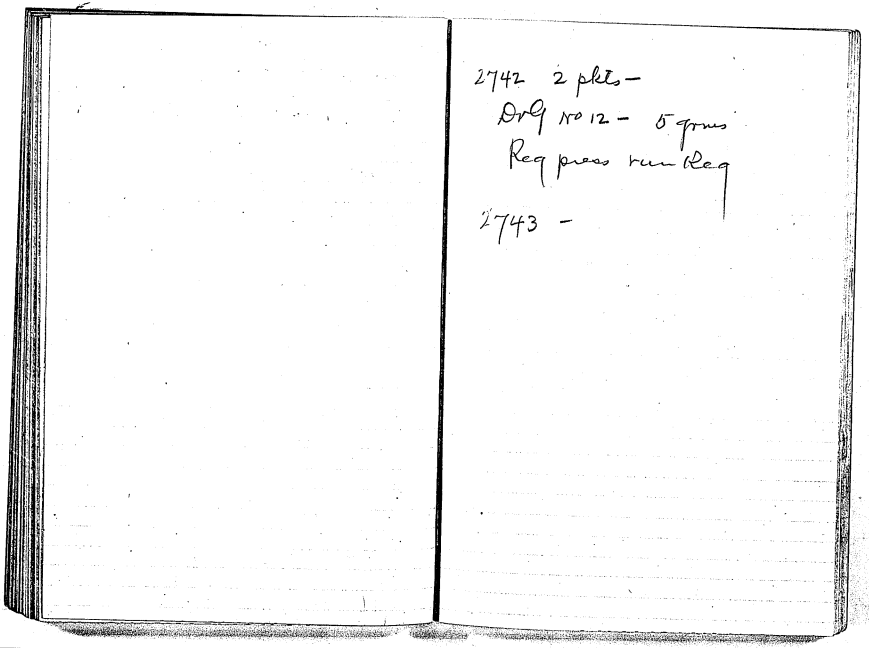
Contrary how it work with HgO added

1	985 857	987 867	

2738 2 pkts - 5 grms
Ra No 731 = 30% Cu 70% Fe
Self heated 4½% Hg 95%
press req trim req
2739

1	1600 847	1005 553

2740 2 pkls
5 grms- RA № 730 —
30% Cu 70% Fe
8% Hg O self heated,
2741.



2742 2 pkts –
DrQ № 12 – 5 grms
Req press run Req

2743 –

gave order to Dr Gravatte

Make Ferric with following
Oxides by Soaking (Brew)

Nickel Oxide in Ferric 4 grams

Co – Ni – Ce, Mn – Sb
Ti Wo, Cr Pb Cd Ur Mo
Sn,

Have to go to Raleigh to Reduce
a Lb of Gent —

2744 2 pockets —
5 grms Each —
Dr Gravatte, Iron from Ferrocyk
fused with Carbonate,
Brass Reg run Reg —

2745 —

No good
only 45 Volts to √
on 2nd Run
130 1st run CO –

1	1245	1255	
	690	695	
	635	645	
	625	637	Cd

2746 2 pkts.

5 qrm [illegible], Dr Q no 11

Reduced in H by RA & Reg amount

Hyp added – Self heated.

Reg press run Reg –

2747

760	560
700	700
665	665
375	393

Run very close

2747 ½ 2 pkts. 5 grammes

Cobalt reduced by Hydrogen
self heated mixed with HQ Req wt
14% HgO =
Reduced by RA = Reppress run very
RA No 732

Wt

2748 Wt

gwen to Harland to test
for ferricyanide Valency etc

1	1080	1090	
	535	497	
	470	320	
	317	275	Co

2749 2 pkts

Dr Grattan No 14

5 grammes -

Reduced by H, secy Curator.

Initial req examined No 20 -

by R.A. | Req procured from req

2750

2751 2 pkts - 5 grms —
Drg No 13 — Reduced in
Ht, Defg heated — HgO added
Reg amount -

2752

Oct 1906 —

2753 = 2 pkts -
Vanadium low ox 60
Copper Ox 40
Reduce H Surface heat acid 5% Hg O -

2754

Careful not reserve Cell,
will go to Vanadic acid +
Cu SO4 — the 21% Kath

Therefore never get Vanadium not mixed with Cu Oxide think Cu Oz OK as gives by percentage more Cu than above prescription required —
Back step Lowest Ox of V Oxide Cu Oxide that we know by the least amount of Cu

Try with over 50% Cu in mix following Tungsten — Chr Cr. Mo oxides.
Mo reduces to metal - also Cerium —
Probably this Copper & Hg double will increase their Capacity

Oct 1 1906 -

Make some iron oxide by following process —

Use iron made in Ferrous Sulphate Mercury Cathode deposit until it will just flow, wash thru & add fresh Hg — Spread Hg in warm place & let fe self oxdy - Collect, add proper amt Hg & use in pockets —

Or press out some Hg by Hydraulic & let it self Oxidize Wash out Hg - & use the Fe Oxide with proper amount Hg O

Think these pieces a Ringer than Oxalate or Roasted FeSO4 & Redola by H.

1	240	177
	330	350
	465	565
	450	575
	496	625
	640	785
	700	895
	790	1035

CD

Note going up when CD

2755 2 pkts — 5 grams
Cobalt peroxide nickle by Dr Q.
by Browns, thro 20 mesh —
Req press run neg of nickels
Dr Q. No 20.

2756 —

1	1032	1052	
	1250	1250	
	1230	1272	
	637	696	
	84	558	
	1035	960	
	896	800	
	785	690	Co

Note Not reduced by Hg Process

9/1279 424 Width 600 grains

2757 – 2 pkts 5 grains –

60 pts Zn . 40 pts Copper 6 oth procs together on Crucibles a ignited – not reduced by Hg

Dr g No 22 – Press + run 300 g

2758

Could take Red Zn + reduce Ag or Cu on it by formaldehyde or Hydrosulfite + use it Raw, also Bismuth –

This might be a fine Exploit NO Hg –

1	125	5c	
	125	160	
	506	410	
	242	237	
	250	250	
	540	540	
	545	430	
	500	460	Cd

2759- 2pts- 5 grm

Equal wts Cu & Fe dissolved in Nitric acid, evaporated & ignited -

Rum & green Reg

Drg-

2760

2761 2 pkts.

75 % Fe 25 Bi reduced ppt
acid hot acid & 5% HgO
added —

2762

2763. 2 pkts

75 ⅞ 25 Cadmium —
Reduced by H and heated,
5% Hydrochloric

2764

2765 =

75 Fe 25 Tungstan,
Reduced by H gas of low C.d
5% H_2O added

2766

2767

75% Fe 25% Antimony -
oxides? Cl H, and loaded
+ 5% H_2O loaded

2768 —

2769 =

75% Fe 25% Tin -
Reduced by H at 600°C for 2 hrs
& 5% H2O added

2770

Neodymium oxide
from the Rare

2771 —

75% Fe 25% Cerium
Reduced by H + Beef heated
5% Hg added —

2772

2773 —

70% Fe. 25% Cobalt.
Reduced 6 hr at 500 C in hydrogen
+ 5% Hydrochloric acid —

2774

2775

75% Fe 25% Ni
reduced by ~~H~~ self heated
+ 5% H_2O added

2776-

2777 -

75% Fe 25% Manganese
Reduced by H sulphuric acid
+ 5% H_2O_2 added

2778 -

2779.

98% Fe 2% Silver
oxidised by H. acid and
+ 5% HgO added -

2780

2781 –

75% Fe 25% Vanadium –
Reduced in Gas H, dried in C.O.2
+ 5% Hydrochloric Acid –

2782

2783.

75% Fe 25% Uranium
reduced by H / acid leached
& 5% HgO added —

2783.

2784.

75% SiF_2 25% MoSi$_2$ Columns
Reduced in H_2, dried at 110°C
+ 5% HgO and dried

2785

2786 —

75% Fz 25% Bramwell seedling ht
Deep heard & 10% Hybrid clod —

2787

1	1310	1275	
	770	715	
	972	927	
	800	775	
	746	704	
	1605	905	
	1000	920	
	795	990	Co

2788 — 2 pkts

5 gms

Penn Delft Plas prep by Knott

boiled 2 days in water

Reduced in Hydrogen at 6 hrs

heated a 2d time Req amount of

H_2O

2789

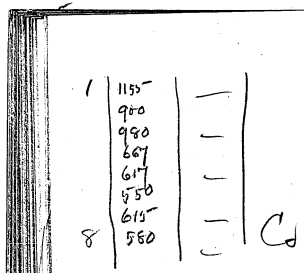
1	512	535	
	425	450	
	517	577	
	500	550	
	608	662	
	742	800	
	775	835	
8	785	845	Co

2790

Dr Grathe No 16

Reduced by H. self boarding & Req amount to 700 a 700

2791



2791/2 1 pkt 4 necked

Electrolytic now amalgam Squeezed out in Cloth in Hydraulic Then acc Cr added & Considerable Hg got out,

Wt 6.720 mix –

- Shook by self heated + then washed on Water to get the Hg out, Water softened & off & then ppty add Hg0 —

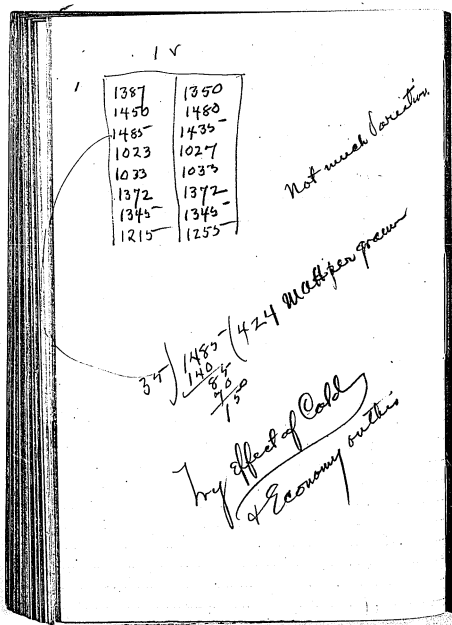
1	437	457	
	452	500	
	550	600	
	208	167	
	167	167	
	645	660	
	660	735	
8	660	720	Cd

2792 2 pkts

Dr G X024 reduced in Hydrogen
Deep heated 5% Hg O added

5 grms —

2793



2794- 2 pkts

Dr Gradhm No 27 - 70% 30 Cdn

Reduced to 64 H a sec'g Contract

5% Id gO

2795-

1	980	980	
	1075	1100	
	1092	1135	
	208	979	
	250	621	
	400	582	
	500	995	C6

2796 2 pkgs

Dr Graham X° 28

Reduced Eq H, self lubricating

5% H₂O

2797

1	45	45
	60	75
	85	85
	75	79

2798 2 pkts
Dr 9 to 31 –
Redeal 6 of H Deck (Green) to
Reg count Hg spot watch it –

2799

1	470	470	
	500	500	
	550	580	
	417	437	Co

2800 2 pts

Dr Gracilis No 30

Rubbed 6/ Ht- Scaff Marrow

5/- Hg Cl

2801

1	40 30 15 12	15 15 17	C_8

2802

Dr. 9 to. 29

Reheat 6 yrs overnight

5% HgO

2803

1	0 5 10 4	0 5 10 4	Cd

1804 2

Dr G 32
Reduced by the deaf hundred
Repayment Rgo

2805

1	45 65 75	45 65 70	Co

2806 2pkts

Dr Sy 34 -

Reduced by H sulphuric acid

Mixed reg ammonia H 40 -

2807

1	160	160	
	155	150	
	155	155	Cs

2808 2pkts

Dr G 33—

Rec'd 6y H, acc'g Receipt

mixed receipt & shipment 1y 0—

2809

1	1100	1092
	1195	1195
	1200	1192
	996	1000
	1108	1108
	1325	1327
	1400	1400
	1350	1339

2810 2 pkts

RA X10 741 607z 40 Cu

Reload acc 6 H 10x5yo

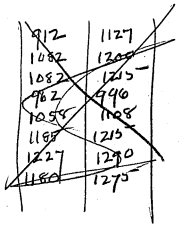
2811

1	995	940
	960	910
	1000	967
	896	833
	1075	1000
	1100	1060
	1145	1100
	1060	1040

2812 2 pkes

Ra X0 742
70% 30 Cu Rolled Scaffold
10% MgO -

2813



1	912	1127
	1082	1200
	1082	1215
	962	996
	1058	1188
	1188	1215
	1227	1290
	1180	1275

1	960	912
	1080	1082
	1080	1082
	954	962
	1058	1058
	1180	1185
	1220	1227
	1175	1180

Note only 2 grms Fe
613 mathpel $ 5
gram 1

2814 2 pkgs
Ra - 739 -
60 Cu 40 Fe
10% Hg0 - Reled & recfd.
2815

V

2 | 1227
613

1	1127	1110
	1200	1200
	1215	1215
	996	983
	1168	1083
	1215	1227
	1290	1285
	1275	1240

Note 516 Math
per gram of Iron
S S
1
Ave Ra 740 gravity
5 grams used
in Bombs

2816 2 pkts
Ra 740
50 % Fe 50 % Cu Reduced Sep'd
10% Hg 90

2817

Perhaps could put rsg % Fe in
$CuSO_4$ or Acetate or some Copper
salt not forming a basic Iron
& self reduces the Cu on Fe
& use very little Cu & get big
results

2	1290
	1250
4	2540
	1270

1	1200	1150	1345
	1060	1025	1280
	1235	1165	1430
	1167	1033	1352
	1306	1183	1417
	1400	1330	1490
	1325	1425	1590
	1400	1300	1445

2818 3 Reg. 2cm pockets 5grams
5/1000 stock 2400 perforations bars inside

2819

2820

1	1255	1200	1190
	1260	1170	1167
	1405	1265	1285
	1358	1233	1217
	1442	1333	1317
	1445	1360	1350
	1555	1500	1500
	1450	1345	1335

2821 3 Reg iron pockets 5 grains
5/1000 stock bore ground rifle bore inside
2400 perforations eyelited

2822

2823

1	1170	1252
	1245	1300
	1355	1455
	1496	1383
	1362	1242
	1635	1555
	1495	1430
	1610	1545

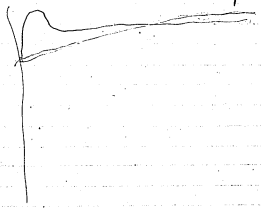
Assembled with a Ni tube & run as Coll 2826

2824 2 pkts

RA 743 reduced & coll heated. 10% HgO — 80% 20 Cu

2825

good Economy



1	995
2	1022
3	1145
4	1147
5	1153
6	1172
*	
57	1187
110 Rum	1271
167	1217
219	1220
221	1185 —
275	940
381	797
434th Rm	563
437 Rum	657

Each fr assembled with 4 new tubes drawn as follows —

438th R	1508
439	1250
440	1387
441	2020
442	1930

Weight to Holland

2826 — These are nows 2666

2667 - Bi 25% Fe 75 c

With a Reg tube —
10 Coffin ckt 24 green cable wire —

Hot test Reg 21%

Ni tube weight 6.745

1	1405	1400	
2	1400	1400	
3	1600	1665	
	1492	1533	
	1400	1400	
	1470	1500	
	1475	1600	
	1530	1600	
	1600	1590	
	1630	1770	
	1590	1685	
	1479	1479	
	1314	1321	
	1545	1655	
	1555	1545	
16	1500	1500	C6

2827

Bragratha. 5% Bi 95% from nitrating Oxalates

$5\%\ Hg_2O$

G 35 - 5 grms -

2828

1	1537	1649
	1410	1482
	1640	1690
	1517	1579
	1417	1550
	1600	1590
	1567	1600
	1600	1650
	1230	1637
	1415	1722
	1500	1627
	1083	1177
	1174	1783
	1600	1780
	1425	1480
16	1500	1570

2829

Dr-G 36 - 10% Bismuth 90% Fe
ignited oxalates. 5% Hg_2
5 grms

2830

1	1145	1145
	1220	1240
	1037	1102
	1000	983
	1054	1054
	1450	1485
	1432	1472
	1415	1450
	1480	795
	1492	970
	1477	1165
	1104	883
	1242	1067
	1565	1470
	1283	1250
16	1485	1362

C)

2831

5 gm

G 37 - 15% Bi 85 % - promptly oxidates, Reduces H, +/- 5% HgO - [illegible]. slightly humid

2832

1	1062	1050	
	1185	1300	
	—	1227	
	1467	1080	
	1317	1292	
	1600	1570	
	1550	1557	
	—	1522	
	1490	1260	
	1492	1430	
	1300	1467	
	1333	1083	
	1300	1392	
	1515	1520	
	1465	1425	
16	1490	1490	C_o

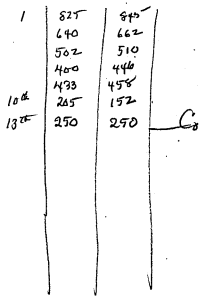
2833 5 gm.

DrG 38- 20% [illegible] 80.7%

[illegible] Oxalates, [illegible] A.

[illegible] 5% H$_2$O = 20%)

2834



2835 Ra 746—

PH Ferrous hydrate- No wash, air dried unwashed- Reduced 5 H. 14% H_2O.

2836

1	970	960
	960	1000
	1040	1080
	1196	1267
	1304	1333
	1377	1500
	1160	1215
	1255	1377
	910	1062
	1090	1222
	1270	1372
	1040	1067
	1250	1258
	1520	1565
15	1255	1300
16	1490	1492

Co

2837 2 pkts

Dr 9 39

25% Bi 75% Fe. Reload by H
acetylated. 5% H2O —

2838

15

1370	1330
1300	1257
1320	1265
1142	1125
1123	1050
1270	1200
1310	1300
1300	1200
1300	1260
1200	1160
1355	1325
917	833
1046	1000
1255	1020
1300	1182
1300	1175

2839 2 Buckets 5 gms

R.A. # 759
88% Fe 12% Cu mixed 5% Hg.O.

2840

1st

1965	1920
1495	1475
1590	1600
1300	1192
1300	1333
1450	1452
1440	1475
1375	1385
1700	1770
1677	1677
1650	1625
1095	1125
1400	1458
1465	1418
1500	1525
1560	1560

2841 2 Packets 5 grams

R. C. 762

88% Fe 12% Cu mixed 5% MgO_2

2842

1240	1260
1022	1060
1270	1300
1100	1150
905	975
1300	1360
1150	1115
1485	1500
1342	1300
1565	1580
1255	1175
1142	1133
742	947
1600	1700 — C_8

2843 — 2 pkts -
75% Fe 25% B_1 5 grm
761 RQ
Reduced as finished 10% of Ngo

2844

1290	1292
1060	1062
1270	1272
1205	1196
1029	987
1360	1330
1195	1220
1485	1390
1300	1427
1535	1530
1300	1290
1167	1146
750	1183
1580	1490

2845 2 pkts.
RA 760 —
757 2581 Mixed with 5-Hydro
Reduced leaf rust

2846

1	925	927
	187	187
	190	190
	167	167
	196	196
	240	265
	300	290
	380	390
	417	440
	534	565

2847 2 pkts

Ra 958 —

Precipitated Ferric Sulphate. by NaOH — dried at high temp. Ruled by H roy

14.1/4 H2O —

2848

985	982
212	220
210	230
207	242
217	233
315	380
354	379
400	427
342	362
457	500

2849 Ra 757
FeSO4 by MnO4, mix req Hgo—

2850

Ferric from Oxalate –
Wet with water + pressed 800 atmos
+ Gent white heat. Shrunk very much
Can be made flat hard to break

slide wet with KOH 21%
shrunk very little. Can be
gent flat / hard to break.